0034

WATER QUALITY MEMORANDUM

Utah Coal Regulatory Program

July 18, 2006

TO: Internal File

THRU: D. Wayne Hedberg, Permit Supervisor

FROM: Dana Dean, P.E., Senior Reclamation Hydrologist

RE: 2005 Third Quarter Water Monitoring, Foundation Coal Company, Willow Creek Mine, C/007/0038-WQ05-3, Task #2308

The Willow Creek Mine has been completely reclaimed, and is in various stages of bond release. Foundation Coal Company completed reclamation work in late 2005.

1. Was data submitted for all of the MRP required sites? YES ☒ NO ☐

Springs

No springs are included in the current monitoring requirements.

Streams

Foundation Coal is required to monitor 6 stream sites at the Willow Creek Mine once each quarter. They are: B3N, B5, B6, B151, B25, and B26. Table 4.7.2 lists the required parameters for these sites.

Foundation Coal properly submitted all required monitoring information in a timely and complete manner for the streams at Willow Creek.

Wells

No wells are included in the current monitoring requirements.

UPDES

There is just one UPDES site left at the Willow Creek Mine, Outfall 001. Foundation Coal monitors it monthly.

Foundation Coal properly submitted all required monitoring information in a timely and complete manner for the UPDES site at Willow Creek. All DMR's reported "no flow."

2. Were all required parameters reported for each site? YES ☒ NO ☐

3. Were any irregularities found in the data? YES ☒ NO ☐

The dissolved oxygen was above two standard deviations from the mean at B5, B6, and B151. However the values (11.9, 11.9, 11.6) are not unusual or of concern.

Several routine Reliability Checks were outside of acceptable values. They were:

Site	Reliability Check	Value Should Be...	Value is...
B3N	Mg/(Ca + Mg)	< 40 %	60 %
B3N	Conductivity / Cations	>90 & <110	84
B3N	Ca/ (Ca + SO4)	> 50 %	46 %
B5	Mg/(Ca + Mg)	< 40 %	42 %
B5	TDS/Conductivity	>0.55 & <0.75	0.52
B6	Mg/(Ca + Mg)	< 40 %	42 %
B6	TDS/Conductivity	>0.55 & <0.75	.52
B6	Conductivity / Cations	>90 & <110	87
B151	Conductivity / Cations	>90 & <110	82
B151	Ca/ (Ca + SO4)	> 50 %	47 %
B151	Mg/(Ca + Mg)	< 40 %	58 %

The Permittee should work with the lab to make sure that samples pass all quality checks so that the reliability of the samples does not come into question. These inconsistencies do not necessarily mean that a sample is wrong, but it does indicate that something is unusual. An analysis and explanation of the inconsistencies by the Permittee would help to increase the Division's confidence in the samples. The Permittee can learn more about these reliability checks and some of the geological and other factors that could influence them by reading Chapter 4 of *Water Quality Data: Analysis and Interpretation* by Arthur W. Hounslow.

4. On what date does the MRP require a five-year re-sampling of baseline water data.

There is no commitment in the MRP to resample for baseline parameters.

5. Based on your review, what further actions, if any, do you recommend?

No further actions are required at this time.

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